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(71) Applicant (for all designated States except US): DSM IP ASSETS B.V. [NL/NL]; Het Overloon 1, NL-6411 Te Heerlen (NL).

(72) Inventors; and

(75) Inventors/Applicants (for US only): STREEKSTRA, Hugo [NL/NL]; Weteringstraat 28-1, NL-1017 SP Amsterdam (NL). BROCKEN, Petrus, Joseph, Maria [NL/NL]; Zwaluw 2, NL-2678 XC de Lier (NL).

(74) Agents: WRIGHT, Simon, Mark et al.; J.A. Kemp & Co, 14 South Square, Gray's Inn, London WC1R 5JJ (GB).

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(54) Title: PREPARATION OF MICROBIAL OIL

(57) **Abstract:** The present invention provides a process for the production of a microbial oil comprising culturing a micro-organism in a two stage fermentation process where, in a last stage that precedes the end of fermentation, the carbon source is: consumed by the micro-organisms at a rate greater than it is added to the medium; added at a rate  $\leq 0.30$  M carbon/kg medium; or is rate limiting on the growth of the micro-organism. The micro-organisms thus have the carbon source restricted so that they preferentially metabolise fats or lipids other than arachidonic acid (ARA), so increasing the proportion of ARA in the cells. A microbial oil is then recovered from the micro-organism, using hexane as a solvent, that has at least 50% ARA and at least 90% triglycerides.